

NEWS DIGEST

Iran claims advances into southern Iraq

Iran Sunday claimed new advances into southern Iraq, threatening the key highway linking Baghdad to the Persian Gulf, and accused the United States and the Soviet Union of secretly helping Iraq in the 42-month war.

Western sources in London warned that as many as 300,000 Iranians may be massing on the border for a major new offensive against Iraq in what may be an all-out attempt by Iran to win the war.

Iran said that in a thrust in the Hur Al-Hoveizeh area its forces seized four miles of the east bank of the Tigris River near the strategic Iraqi highway connecting the capital of Baghdad to the southern Iraqi port town of Basra.

Iran is seeking to block shipments from Baghdad to the gulf.

Iran said Sunday it destroyed an Iranian offensive, but did not specify where the fighting took place.

"Iraqi units confronted the attacking force, engaging it in a quick and decisive battle and forcing it to retreat after inflicting heavy casualties in men and equipment," said the Iraqi news agency INA, monitored in Abu Dhabi.

Jury selection starts in Bishop court case

SALT LAKE CITY (UPI) — At least 90 people have been called today as potential jurors to decide the fate of Arthur Gary Bishop, the former Eagle Scout and Mormon missionary accused in the six-related killings of five young boys.

Defense and prosecution attorneys and District Judge Jay Banks said Bishop's capital murder trial may take up to three weeks.

Banks said jury selection could take longer than usual because extensive pre-trial publicity could make it more difficult to find 12 unbiased jurors and two alternates.

Attorneys said they could not talk about the case because of a gag order issued by Banks. But they agreed jury selection could be a long process.

"I'm expecting it may take a week," said

chief defense lawyer Jo Carol Nesset-Sale. "It could turn out the jury selection could take longer than the trial."

Chief prosecutor Robert Stott said pre-trial publicity should not preclude a jury from being seated.

"I expect to be able to get a jury," he said.

Bishop, 34, is accused of 11 felonies, including five counts of first-degree murder, five counts of kidnapping and one count of sexual abuse to a child. Charges of sexual abuse involving four of the victims were dismissed in a preliminary hearing.

Bishop could receive the death penalty if convicted.

Dangerous convicts sighted, says official

KINGSFORT, Tenn. (UPI) — One of three armed and dangerous convicts who escaped from prison eight days ago is believed to be in Illinois, and the other two were seen north of Knoxville, a Tennessee official said Sunday.

Arzo Carson, chief of the Tennessee Bureau of Investigation, said an informant provided information that Sylvester Alexander, 33, from Memphis, escaped a police dragnet in west Tennessee and made it to Glen Carbon, Ill., on Thursday.

Carson also said in Nashville that officers believe they have two positive sightings of two other fugitives who killed a man in Brownsville, Tenn., Tuesday, and drove 400 miles across the state to Knoxville where they released the victim's abducted wife on Wednesday.

Amherst frats angry at trustees' decision

AMHERST, Mass. (UPI) — Amherst College fraternity members, angry at a decision by trustees to close them down, hanged school officials in effigy, threw weekend parties, engaged in food fights and put up "For Sale" signs.

"The students are insulted at the administration, at the trustees' decision to close the fraternities," Dave Scagg, president of the Inter-Fraternity Council, said Sunday, one day after the school's board of trustees announced the eight coed fraternities would be closed at the end of

the semester because the quality of life on campus had "become inadequate."

U.S. Marines end mission in Lebanon

BEIRUT, Lebanon (UPI) — The U.S. Marines ended their 17-month peacekeeping mission in Beirut Sunday with the last Americans leaving their airport base 40 minutes before U.S. warships fired their mammoth guns at Druze rebel targets.

An American priest and a French peacekeeping soldier reportedly died as new fighting broke out Sunday evening between rebel militiamen and government troops in the hills overlooking Beirut and along the "green line" dividing Moslem west Beirut and Christian east Beirut.

The rightist Christian Phalange radio said American priest James Michael Finnigan died from shrapnel wounds and three Lebanese were wounded by shells landing on the eastern half of the capital. There was no other information immediately known on Finnigan.

"Mortars shells landing on one of our positions near the green line killed a French soldier, the 57th to die since we came here," said Capt. Jean-Yves Blouin, spokesman for the French peacekeepers.

Fonda appearance dropped after threat

MIAMI (UPI) — Publicity appearances by actress Jane Fonda at two Miami department stores were canceled Sunday because of a bomb threat and pressure from the conservative Cuban exile community, department store officials said.

Fonda had been scheduled to appear at two Burdines department stores Wednesday to promote a new line of sportswear.

"Burdines was concerned about the safety of our associates and our customers, and it has turned into a battle of political viewpoints," said Ted Shola, operations manager for Burdines' store at Dadeland Mall, which was evacuated Saturday because of the bomb threat.

"We've had numerous phone calls and we have to be concerned about Shola," Shola said. He said no more bomb threats were received. Police said no bomb was found at the Dadeland store after the threat by an anonymous caller.

Hart says Democratic race between him and Mondale

CONCORD, N.H. (UPI) — Sen. Gary Hart, buoyed by a poll showing him finishing second in Tuesday's New Hampshire primary, said Sunday the race for the Democratic nomination boils down to a contest between him and Walter Mondale.

Hart's new optimism came from a Washington Post-ABC poll that showed front-runner Mondale still well ahead, with 38 percent of the New Hampshire vote, to 24 percent for Hart. But it showed Sen. John Glenn, of Ohio, had slipped into third place with 14 percent of the vote.

The Mondale camp seemed unconcerned about Hart's new strength. The former vice president left New Hampshire briefly to campaign in Maine and Vermont, the next two stops on the political calendar after New Hampshire.

In Portland, Maine, Mondale refused to make any prediction on Tuesday's outcome, but said he is "doing quite well" in New Hampshire.

The Post-ABC poll showed civil rights activist Jesse Jackson had 7 percent; former Sen. George

McGovern of South Dakota, 6 percent; Sen. Ernest Hollings of South Carolina, 4 percent; Sen. Alan Cranston of California, 1 percent, and former Gov. Reubin Askew of Florida, less than 1 percent.

At stake officially are 22 delegates to the Democratic national convention in San Francisco in July. But for many Democrats the stakes are even higher - who will become Mondale's chief challenger for the Democratic nomination and which ones will be able to continue the campaign through March 13, when nine states hold primaries and caucuses.

President Reagan has no serious opposition for the 22 delegates in the Republican primary.

Hart said he is surprised to be so far in front of Glenn, so early.

"This race has solidified faster than our somewhat conservative, cautious approach," Hart told reporters on a campaign swing through southern New Hampshire. Hart said the time is fast approaching when the race will come down to a contest between him and Mondale.

WEATHER

Utah Valley forecast: Areas of night and morning fog and low clouds. Otherwise fair through Tuesday. Highs: 35-40; lows: 15-20.

For the 24-hour period ending 5 p.m. Sunday:
High temperature: 37
Low temperature: 18
One year ago: 48-36
Prevailing wind direction: west
Peak wind speed: mph, 12-30 p.m. Sunday
High humidity: 99 percent
Low humidity: 54 percent
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Since Oct. 1, 1983: 14.1 inches



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Elder Paul Dunn to speak Tuesday

Elder Paul H. Dunn, a member of the First Quorum of the Seventy of The Church of Jesus Christ of Latter-day Saints, will speak Tuesday at the BYU Devotional assembly.

The public is welcome to attend the 10 a.m. assembly in the Marriott Center. The talk will be televised live on KBYU-TV (Channel 11) and repeated at evening at 9 p.m. and March 4 at 6 p.m. It will also be broadcast live on KBYU-FM (88.9) and repeated March 4 at 9 p.m.

Elder Dunn, a general authority since 1964, is executive administrator of the British Isles for the LDS Church and formerly served in that position for the Midwest Area of the United States.

The Provo native earned a bachelor's degree in religion from Chapman College in 1953 and master's and doctoral degrees in educational administration from the University of Southern California. An outstanding athlete in school, he played professional baseball for the St. Louis Cardinals for four years. He taught in the LDS Church's seminary system and later served as coordinator of LDS institutes in Southern California.

He has authored 20 books, the latest of which include, "The Human Touch," "Horizons," "Success Is . . ." and "Your Eternal Choice."

Chicago boy recovering

CHICAGO (UPI) — Four-year-old Jimmy Tontlewicz, who survived nearly 30 minutes in Lake Michigan's icy waters on Jan. 15, has been allowed to play outdoors and will enter a rehabilitation center next week, it was reported in the Chicago Sun-Times.

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"Pack your bags—we're leaving"

That was the message of BYU's first president, Karl G. Maeser, to his family after he had decided that he could sacrifice no more on the school's behalf. (He was in debt and at times did not receive the salary he had earned.)

His wife and daughter packed, and then sat on their trunks. Time passed. Finally, his daughter asked her father when they were leaving. Dr. Maeser's response was, "I have changed my mind. I have dreamed a dream—I have seen Temple Hill filled with buildings—great temples of learning, and I have decided to remain and do my part."

The purpose of the Student Telefund, begun in 1971, is to give students the opportunity to do their part . . . to keep Karl Maeser's dream abundantly alive.

In the coming weeks you'll receive a call from a fellow student asking you to contribute to BYU. We invite you to remember Karl G. Maeser and the thousands of other BYU benefactors who have sacrificed for this institution and its students, and to then give generously.

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rofoundly deaf man hears with new 'ear'

LEEN FOSTER
Monday Editor

decades ago David Columbus could normally. Suddenly, at age 31, he was with an unexpected loss of hearing in the. Six months later he lost virtually all hearing in his other ear.

ampus was a victim of Meniere's syndrome, a disease that can destroy the fragile cells lining the inner ear. For a while he could hear somewhat using a hearing aid. A years passed, and his world was imbedded in silence as he became one of the 90 profoundly deaf in the nation.

today, by using a battery-powered hearing aid, Columbus, 52, hears and understands. There was little hope of hearing years ago for the past eight years he has been working as a volunteer with researchers of artificial hearing at the University of Utah. He is part of the National Institute of Health's research in its developmental stages at research labs throughout the nation. Researchers are working to find a solution that will allow many of the profoundly deaf in the nation to hear and speak.

Donald K. Eddington, a bioengineer as headed the Utah lab, directed the artificial hearing project in which four volunteers have received the INERAID ear. Last week, the Food and Drug Administration granted approval to the company to test the ear in twenty more patients. Columbus, now a vocational counselor for the deaf in San Diego, can now distinguish between male and female voices, identify tunes and recognize about 80 percent of words spoken by a person he cannot see. He faces a speaker and uses his lip-



A deaf volunteer in the University of Utah's artificial hearing project has a cable attached to a "button" just behind his ear, which links a computer to electrodes implanted in his inner ear.

reading skills, he can carry on an essentially normal conversation.

The artificial hearing system is designed for those whose deafness is related to a sensory loss, for example, when microscopic hair cells in the inner ear are destroyed by disease, old age or exposure to loud sounds, said Eddington.

In order for the system to work, the auditory nerve must be at least minimally functional and processing areas within the brain must be intact.

In normal hearing, sound waves entering the ear travel through the ear canal and wig-

gle the eardrum, Eddington explained. The mechanical motion of sound is transferred to the spiral-shaped cochlea by three small connecting bones. Nerve fibers, or hair cells, along the cochlea then selectively "fire," depending on the sound's pitch.

The experimental electronic hearing system has six equally spaced electrodes implanted along an inch of the cochlea.

Also part of the system is a tiny microphone, which picks up incoming sounds, and a sound-processor box, which is the size of a pocket radio and is carried around by the patient.

Catholic priest molests boys, parents sue

VENTURA, Calif. (UPI) — The parents of four boys molested by a priest — one of the sex acts committed in a confession — are suing the Catholic Church for failing to keep the admitted homosexual away from children.

The Superior Court lawsuit filed Thursday claimed the Rev. Patrick Roemer, now on probation and working in a bookstore, told counselors and psychologists of his sexual preference for youngsters before the boys were molested.

The parents claim church officials should have known Roemer would continue molesting children in the course of his priestly duties.

Attorney Chuck Samonsky said one boy, currently in therapy, suffered a "180-degree personality change."

Artificial organ development gives patients new freedom

Continued from page 1

ysis machines require patients to make semitrip to be hooked into a filtering machine. J. Kolff, director of the University of Utah Center for Biomedical Engineering, helped in the development of a 5-pound, battery-powered wearable artificial device, called a "WAK," that allows the patient to carry the filtering system in their everyday lives.

Medical engineers, however, are not satisfied with the blood outside the body and are continuing to search for an internal dialysis machine.

It is time will come that all artificial kidneys will be wearable and so small they can hardly be seen when worn," Kolff said.

Complete relief for sufferers of kidney failure is available only through kidney transplants from a compatible donor. However, the body frequently rejects the foreign kidney and more than 100 patients are on the waiting lists for kidney transplants around the country.

55,000 patients are currently using dialysis-filtering devices around the country, said Kolff.

Artificial hearts could help prevent some of the 10,000 deaths from coronary attacks that occur each year. "One-third of these people now die because of a heart, and another third die on the way to hospital. Of the other third, a very large percentage are potential candidates for an artificial heart," Kolff said.

University of Utah implanted an artificial heart in BYU alumnus Barney Clark in Dec. 1982. The heart, made of aluminum and polyurethane, beats 100,000 times every day. Further development still in the trial stages is



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Consumer prices jump .6 percent

WASHINGTON (UPI) — Consumer prices, led by a spurt in food costs and a record jump in telephone bills, rose 0.6 percent in January, the biggest monthly increase in inflation since last April, the government said today. Despite the sharp rise, White House spokesman Larry Speakes said, "The prospects remain excellent for continued low rates of inflation."

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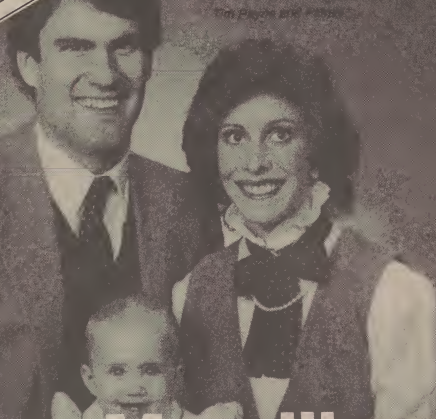
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SPORTS

Wyoming deals Y critical loss

By SCOTT D. PIERCE

Asst. Sports Editor

Trailing Wyoming 56-55 with two seconds showing on the clock in Saturday night's game, the BYU basketball team had apparently done what it wanted to do.

With five seconds remaining, the Cougars had rebounded the ball to Devin Durrant, their leading scorer, who was fouled with two seconds left.

One official signaled that Durrant, who was six of seven from the charity stripe in the game and an 80 percent free throw shooter on the year, would go to the line for two shots.

But another official indicated he had stopped play before the inbound pass because of the debris thrown on the court by the typically obnoxious Wyoming crowd. The play during which Durrant was fouled was negated and the Cougars were forced to take the ball out of bounds again.

"He (the official) took the ball away from the No. 2 scorer in the nation," said BYU Coach Ladell Andersen. "I think it was unfair. You do not blow your whistle on that type of a situation after the crowd has already been warned."

"If you do, you call a technical foul (on the Wyoming crowd)."

Incredibly, when the clock was reset BYU was given four seconds instead of the five they originally had. Unable to get the ball to Durrant, Marty Perry took an 18-foot shot from the corner that bounced in and out of the hoop.

BYU's Jim Usevitch was knocked to the floor attempting to grab the rebound off Perry's shot. But while one official signaled a foul on the Cowboys, another said there was no call because time had expired.

While the Cougars were still trying to figure out what hit them, a shower of ice, cups and other

debris rained down from the stands onto the court.

"We got one second less on the clock and we couldn't get the ball who we wanted to," Andersen said, adding that the loss of a second meant the foul on Usevitch occurred after the clock had run out, costing BYU a chance to win or take the game into overtime.

"Unless some kind of disaster happens on the floor, you don't penalize the team that gets the ball in."

The normally reserved Andersen was outspoken in his criticism of the officiating in the game's final moments.

"The official just simply butchered the game on a call," he said. "That was really a bad call — maybe the worst I've ever seen in my 25 years in the business."

A team yipping for the Western Athletic Conference championship may have lost it because of an official's call.

Indeed, BYU's second loss in three days cost them any chance they might have had to host the final four of the WAC post-season tournament.

The Cowboys' win drops BYU to 9-4 in league play and 16-9 overall, eliminating the Cougars' hopes to win 20 games in the regular season. BYU appeared to have the game in hand with just over a minute remaining. With a 55-54 lead and possession of the ball, the Cougars had the Cowboys on the ropes.

But a pass from Chris Nikchevich to Scott Sinek went out of bounds and gave Wyoming the ball back with 1:09 remaining.

The Cowboy's Rodney Gowens, who ended the game with eight points, swished through a 22-foot shot to give Wyoming the winning margin with 52 seconds left in the game.

Following two BYU time outs, sophomore guard Brian Taylor missed a shot and the ball went out of

bounds off a Wyoming player with five seconds remaining, setting up the unbelievable finish.

"Give Wyoming due credit for doing what they had to do," Andersen said. "It's unfortunate that almost 40 minutes of good basketball had to be spoiled by the calls at the end."

The game was intensely competitive throughout. BYU took its biggest lead early in the game, jumping off to a 10-4 advantage. The Cowboys came back to take a five-point lead, their largest of the night, and the score was knotted at 32 at halftime.

There were 12 tie scores and the lead changed hands 15 times. Wyoming's biggest lead in the second half was four points — BYU's was only three.

The Cougars outshot the Pokes 51.2 percent to 45.3 percent from the field, but Wyoming got off to more shots. BYU had a horrible night on the boards, being outrebounded 33-25.

Durrant led all scorers with 22 points. He hit eight of 12 field goal attempts and six of seven from the line, grabbed six rebounds and dished off two assists in his best performance in over a week.

The only other Cougar in double figures was sophomore Usevitch, who made his first appearance in BYU's starting line up. He took the place of Mike Smith, who was sent home to Provo on Friday because of illness.

Usevitch made four of seven field goal attempts and three of four from the charity stripe to total 11 points. He also pulled down six rebounds.

Jamal Hosey, a 6-foot-6-inch junior forward, led the Cougars in scoring with 19. "He really hurt us," Andersen said. "Against our zone he was able to penetrate."

The Cougars will try to end their three-game road trip on a winning note as they take on Air Force, the WAC's cellar dweller, tonight in Colorado Springs.

Cougar hopes fade with fourth loss

The Cougars' loss to Wyoming on Saturday night ended their hopes of hosting the final four of the Western Athletic Conference's first post-season tournament. Texas El Paso's win over New Mexico assured the Miners the host's spot for the final two rounds.

BYU still has a chance to tie for the regular season crown with UTEP. Should they win their final three games (against Air Force, UTEP and New Mexico) the Cougars would end the season with a 12-4 record in league play.

In order for Texas-El Paso to drop to 12-4, the Miners must not only lose to BYU on Thursday, but to Utah in Salt Lake City on Saturday.

But even if BYU and UTEP end the season with identical WAC records, the Miners would host the final four under the tie-breaking system.

The first tie-breaker is the two teams' records against each other. Should BYU win on Thursday, the Cougars and the Miners will have split the series.

The next tie-breaker compares how the two teams fared against the third-

place squad. If that is the same, their records against the fourth through the ninth-place teams, in that order, are considered.

BYU and UTEP both split with San Diego State and Colorado State, so those series would not break the tie.

Even if UTEP loses to Utah, the Utes cannot finish ahead of Wyoming in the standings. Texas El Paso would host the tournament on the basis of BYU's loss to Wyoming.

At the moment, the Cougars are in danger of falling from second place in

the WAC to third. BYU's record is 9-4, while New Mexico is only a half game back at 9-5.

Under the format of the WAC tournament, the second-place team receives a bye to the semi-finals. Should BYU finish second, its first game in the tournament would be March 9 in El Paso against the highest-rated survivor of the first two rounds.

Should the Cougars finish in third place, they would host a second-round game on March 7. With a win, BYU would then advance to the semi-finals.



Chris Nikchevich tries to pass the ball around the defensive pressure of Wyoming's Tony Brown during BYU's win in the Marriott Center last month. The Cougars were not so fortunate Saturday as the Cowboys won the rematch in Laramie 56-55.

Universe photo by Lynn Howlett

UTEP tops Y for WAC track crown

By DOUG FOX
Staff Writer

UTEP won seven out of 14 events and one of the Miners set a new world record in the 35-pound weight to regain the Western Athletic Conference Indoor Track Championship from defending champion BYU, which took second place in Saturday's finals at the Air Force Academy.

The championship marked UTEP's 11th title in 11 years. BYU is the only other school to have won the crown in that time period, upending the Miners by 26 points last year in New Mexico.

New Mexico took third in this year's meet, the same position it won last year, with a score of 87.

The rest of the scores were Air Force 65, Wyoming 35, Colorado State 19 and Utah 7.

Tore Johnson, a 6-7, 260-pound

senior from UTEP, set a new world and national collegiate record with a throw of 78 feet-7 inches, to take first in the 35-pound weight.

UTEP's Dave Puvozel set a meet record with a jump of 7-4 1/2 in the high jump competition.

BYU won four events in the competition, including a new WAC record in the shot put. Soren Tallheim's 67-7 first-place throw in the shot put bettered the record he set Feb. 18 in Provo by 2 1/2 inches.

The meet was the pole vault for BYU, setting a new meet record at 17-1 1/2.

BYU's All-America cross-country runner Ed Evestone won the two-mile run, defeating UTEP's two-time NCAA champion Gidimas Shahanga.

Evestone also finished third in the mile.

Brad Jackson won the 440-yard dash for BYU despite running with mismatched shoes. Jackson blew out

the side of his right shoe in Friday's trials.

He carried a spare set but decided to run with a mixed pair because the spare set gives him blisters on his left foot.

Other events won by UTEP were the 60-yard dash, 60-yard high hurdles, 600-yard run, triple jump and mile relay.

Air Force won the 880-yard run, New Mexico took first in the mile and Wyoming won the 1,000-yard run.

To last year's outdoor championships, BYU was denied solepossession of first place when Bestor was disqualified under the honest effort rule.

Three of UTEP's pre-meet favorites were sidelined with injuries in Friday's trials and did not compete in the finals: Joey Wells in the long jump, Carl Meyer in the 400-yard dash and Dave Lavery in the middle distances.

While UTEP performed well in the championships, the Cougars had trouble on the second day of the meet. BYU's Pat Milanzi was kicked from behind and stumbled in the 440 finals, and sustained a knee injury. A

Generals open season with 17-6 win

By UNITED PRESS INTERNATIONAL

Football fans registered the most noteworthy statistic of the day by sending the turnstiles swirling Sunday for the New Jersey Generals' 17-6 victory over the Birmingham Stallions on the opening day of the U.S. Football League's second season.

A record 62,390 fans turned out to watch former Buffalo Bills running back Joe Cribbs make his USFL debut against the Generals' Herschel Walker, the former Heisman Trophy winner who led the USFL in rushing last season.

Neither running back was outstanding, however, as Walker finished with 43 yards on 17 rushes and Cribbs had 52 on 16. A federal judge decided only last Thursday that Cribbs could play for the Stallions instead of giving Buffalo an opportunity to retain his contract.

Total attendance for the eight Opening Day games was 278,133, an average of 34,767. Crowds ranged from the Birmingham throng to the 15,387 in Oklahoma who watched the professional debut of 1983 Heisman Trophy winner Mike Rozier.

None of the three quarterbacks who saw action in the game was particularly sharp. Former Cleveland Browns quarterback Brian Sipe completed 12 of 24 passes for 175 yards and one interception for the Generals.

Former Pittsburgh Steeler back Cliff Stoudt was soundly booed by the Birmingham crowd before being taken out of the game midway in the third quarter. He completed six of 13 passes for 51 yards and one interception.

Bobby Lane, who replaced Stoudt, was 13-for-27 for 143 yards and one interception.

The Generals went ahead 10-3 at halftime on a 51-yard field goal by Roger Ruzek.

The field goal came after Birmingham scored its first of the first half, a 26-yard field goal by Scott Norwood. Norwood's kick was set up by Dennis Woodberry's interception of a Sipe pass. The rookie defensive back from Southern Arkansas returned the ball 27 yards to the New Jersey 26.

Norwood also kicked a 32-yarder with 12 minutes left in the game that capped a 51-yard, 12-play drive.

In other games, Tampa Bay topped Houston 20-17, Philadelphia handed Memphis 17-9, Jacksonville routed Washington 53-14, Oklahoma beat Pittsburgh 7-3, New Orleans downed San Antonio 13-10, Denver topped Los Angeles 27-10 and Arizona whipped Oakland 35-7. Chicago is at Michigan on Monday night.

Bandits 20, Gamblers 17

At Tampa, Fla., Gary Anderson ran for 114 yards and a pair of touchdowns and Zenon Andrusyshyn kicked two field goals to spark the Bandits before a crowd of 42,915. Anderson scored on the two-yard run with 27 seconds left in the first half and scored the winning touchdown on a 12-yard burst with 2:33 to play in the game.

Stars 17, Showboats 9

At Memphis, Tenn., Chuck Fusina lobbed a 42-yard touchdown pass and turned in a 38-yard run to

set up a final score for Philadelphia. A crowd of 25,008 was at the Liberty Bowl on a chilly overcast day to watch the debut performance of the Showboats, one of a handful of expansion teams to join the USFL in its second season.

Bulls 53, Federals 14

At Jacksonville, Fla., Matt Robinson passed for 299 yards and three touchdowns in the Bulls' USFL debut before 49,392. Robinson threw for scores of 74 yards to Aubrey Matthews in the first quarter, 54 yards to Wyatt Henderson in the second quarter and four yards to Robert Young in the third quarter.

Outlaws 7, Maulers 3

At Tulsa, Okla., Doug Williams, making his USFL debut, threw a 12-yard touchdown pass to Derek Hughes with 1:27 left to produce the victory. The game drew 15,937 and was played in rainy, windy conditions. Oklahoma kept Pittsburgh running back Rozier in check, limiting the Nebraska product to just 27 yards in 16 carries.

Breakers 13, Gunslingers 10

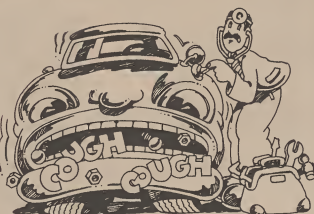
At San Antonio, Texas, fullback Mark Schellen ran for one touchdown and quarterback Johnny Walton threw a fourth quarter scoring pass for New Orleans. It was the first game ever for the Gunslingers.



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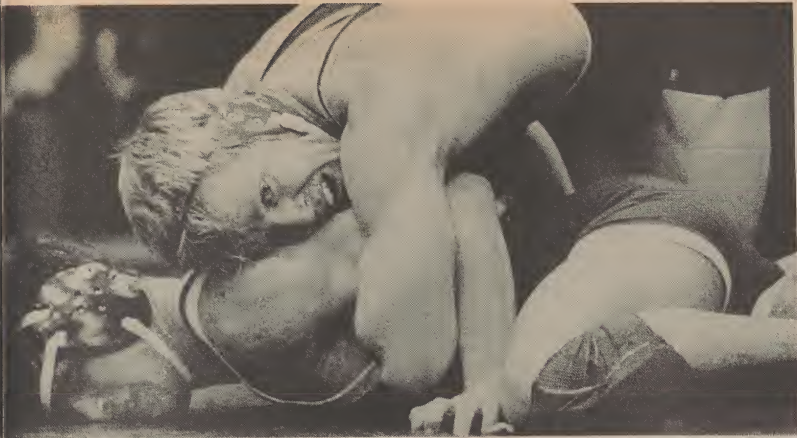
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BU's Fred Allan glances at the clock late in his match against J.B. Waltermire in the 158-pound bracket championship match. Allan de-

cisioned Waltermire to help the Cougars win their 16th WAC Championship in the last 22 years.

Cougar wrestlers regain WAC title

BYRON STEINER
Sports Reporter

Predictions hardly ever turn out like they are expected to and the events that transpired on the mat of the Smith Fieldhouse Saturday illustrate that. The BYU wrestling team overcame the odds to beat the defending WAC champion, Wyoming, and win their 16th conference title. The Cowboys were picked to win the entire tournament, but could only manage a fourth-place finish behind the surprisingly strong Air Force team, New Mexico and BYU. The WAC crown was still up in the air when the match of the day started. New Mexico held a one-and-a-half point lead over BYU going into the heavyweight championships. Since their heavyweight wasn't in the final competition they only hope that Terry Maki of Air Force could beat BYU's Henry Williams.

BYU's hope for the conference title was laid on the shoulders of Williams. If he won, the Cougars would take home the championship. If he lost, the title would go to the champs.

The stage was set, the tension had mounted and the crowd was set to explode. With only 23 seconds

left in the match the score was tied at 4-4. The two met in the center of the mat and prepared to square off for the final ticks of the clock.

Instructions were heard from all directions as Williams made his move. He dove for his opponent's leg and grabbed the ankle. Then with a show of strength, Williams brought Maki to the mat. The match was over and the Cougars were the new champions.

The final score of Williams' match was 6-4. The victory helped him gain a berth into the national tournament scheduled for March 8-10.

"Anything can happen in a tournament like this," said BYU Coach Davis. "I'm really pleased. That's the hardest we have fought. Our guys really came on at the end."

The Cougars had a total of four champions in the tournament. As expected, Brad Andersen won the crown at 118 pounds and also won a bid into the nationals. Andersen is now 35-1 on the season and ranked fourth in the country at his weight.

In his championship match, Andersen faced Bruce Garner of New Mexico and seemed to have an easy time from start to finish as he racked up points with his quickness and strength.

The final score of his match was 10-3. Andersen, who had beaten Garner previously by a superior

decision, 12 points or more, couldn't manage to pin his opponent. "I wanted to pin him, but it doesn't matter," Andersen said. "I'm glad I won."

Fred Allan won the championship at 158 pounds and also a chance to participate in the national tournament. His match was one of the closest of the day. The final score was 5-4. At the beginning of the third period he was behind by one point 4-3.

Allan desperately needed to do something to earn some points, but couldn't manage to make a take down, worth two points. On different occasions he had his man down on the mat after first gaining the advantage by grabbing the leg of his opponent, but he didn't gain any points from them because the referee claimed they were off the mat.

In the end, he was awarded a penalty point because his opponent was called for stalling, and that helped to win him the match.

Ron Hansen, one of five brothers who also have won WAC championships for BYU, became the sixth as he beat Joe De Camillis of Wyoming in the 190-pound weight class. He won in decisive fashion with a 12-2 victory. Hansen controlled the entire match as he outlasted his opponent with superior strength and skills.

The four champions will now prepare to wrestle in the national tournament.

Olajuwon scores 19 as Houston triumphs

HOUSTON (UPI) — Akeem Olajuwon scored 19 points and Alvin Franklin hit for 12 of his 14 points in the second half Sunday to rally No. 3 Houston past No. 11 Arkansas 64-61, virtually securing the second consecutive Southwest Conference title for the Cougars.

Franklin, held without a field goal in the first half, scored eight straight points midway through the second half, which gave the Cougars the lead for good with eight minutes remaining.

Arkansas, led by Alvin Robertson, led until 14:50 of the second half when Olajuwon went off 6-foot-11-inch center Joe Kleine for a tip-in and a 41-40 advantage.

Houston, 25-3, won its 38th straight SWC game and opened a two-game lead over the Razorbacks. The Cougars need only a victory over last-place Baylor Wednesday night to capture the title.

Olajuwon also had 10 rebounds and six blocked shots. Kleine countered with 17 points and 11 rebounds. Houston's Michael Young, the SWC's leading scorer, added 17 points under heavy defensive pressure from Leroy Sutton.

With Young playing tightly in the first half, Arkansas led by eight points. The Razorbacks were ahead 32-27 at the half. Robertson made the steals in the first 10 minutes as the Razorbacks bothered Houston with a man-to-man full-court press.

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UTEP clinches at least a tie

EL PASO, Texas (UPI) — Fred Reynolds scored 21 points to lead ninth-ranked Texas-El Paso to a Western Athletic Conference victory over New Mexico Saturday and clinch at least a share of league title for the Miners.

UTEP, which rose to 24-2 on the year with the win, boosted its conference record to 12-2, also earned the right to host the WAC post-season tournament March 9-10 with the win.

New Mexico outshot the Miners from the field. UTEP made 19 of 20 free throws in the final 40 of the game to pull away from the pesky Lobos. Before UTEP began its parade to the foul line, the Lobos had fought back from a nine-point deficit

WAC STANDINGS

WESTERN ATHLETIC CONFERENCE Basketball Standings

	Conf.	Overall
UTEP	12-2 .857 24-2 .923	
Utah Young	9-4 .692 16-9 .640	
New Mexico	9-5 .643 21-8 .724	
Utah	8-6 .571 15-11 .577	
Utah State	7-6 .538 13-12 .520	
San Diego State	5-8 .387 14-11 .560	
Utah State	4-9 .308 10-15 .400	
Utah	4-10 .286 10-15 .400	
Air Force	3-11 .214 8-15 .348	

Saturday's results

Utah Young 56, Brigham Young 55
Utah State 75, New Mexico 66
Utah 76, Utah 69
Utah 57, San Diego State 55



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THE VAL BURGER

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Women hoopsters grab first



Valerie Cravens drives to the basket during BYU's victory over New Mexico State. Cravens had a triple double for the Cougars, who took over sole possession of first place in the HCAC with two victories last weekend.

By KATY FROST
Staff Writer

BYU's women's basketball team defeated the University of New Mexico and New Mexico State University over the weekend, giving the Cougars sole possession of first place in the Holy Country Athletic Conference.

On Thursday night, BYU defeated the UNM Lobos 93-71. The Lobos had defeated the Cougars earlier in the season.

BYU Head Coach Courtney Leishman, who was ecstatic with his team's performance, attributed the win to the physical strength of the Cougars.

"We were about 65 percent better physically tonight than when we played down there (Albuquerque). That made a big difference. It was nice to have everybody healthy," Leishman said.

Although the score is not indicative of their play, the Lobos also had a good performance.

"I didn't think they ever quit," Leishman commented. "We had to keep working the entire game. Some teams will just let you have it, but they sure didn't."

New Mexico's Yvonne McKinnon led her team with 24 points and 10 rebounds.

Leading the way for the Cougars was senior guard Valerie Cravens, who pulled a triple double in the contest. She scored 19 points, pulled down 12 rebounds and dished out 12 assists.

"She's got a nose for the ball. She lifts everybody else," said Leishman. Cravens, who is still recovering from a dislocated elbow, is pleased with the way she is playing.

"Inside, I think I am reaching my potential as a player," she said. Although her elbow still hurts,

Cravens said the pain does not affect her game. "I get some pain, but I don't notice it on the court."

Leishman explained what a hard road back it has been for Cravens since her injury. "She has gone through a rehabilitation program that has been very painful."

Cravens turned in a solid performance for the Cougars, but she was not the only star for BYU.

Another fine performance was given by Karen Hancock. Hancock did not start the contest, but she came off the bench to give the Cougars a lift.

Although Hancock does not start for BYU, she is happy with her role.

"It doesn't matter if I'm in the whole game or just a few minutes, just as long as I do my job when I'm in," said Hancock.

Leishman was pleased with Hancock's performance.

"I really appreciate Karen's attitude. She's good enough to start, but plays better off the bench. It's a comfort to me to know that when she gets in there, she's going to give it everything she has."

Hancock had 14 points, five rebounds and two steals.

Cindy Battistone also had an excellent game with 12 points, five rebounds and six assists.

"Cindy is like glue," Leishman said. "She gives us the cohesiveness we need, not only verbally, but also by her performance. She is a very unselfish player."

Against New Mexico, BYU's bench showed it has a lot of depth.

"We're deep on the bench, and I know if one player is off, then we've got someone who can come in and do a good job," Leishman said.

All 13 Cougar players saw action in the contest.

Nationally ranked Clemson tops women's tennis team

Although the BYU women's tennis team lost to 13th-ranked Clemson 6-3 Friday, BYU got what Coach Ann Valentine called the "best doubles we've played in a long time."

The Cougars were one of four teams playing in the Northwestern University round-robin invitational. The high point of Friday's match for BYU was the play of Leslie Craig

and Helen Christiaanse at the number one doubles spot. The two easily whipped the Tigers' top doubles team of Jane Foreman and Jody Trucks 6-3, 6-2.

BYU's Lesley Fox was the only winner in singles for the Cougars. She then teamed with Lynn Hogenauer to grab the victory at the number three doubles position.

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Y netters win two matches

The BYU men's tennis team improved its dual record to 4-7 on the season with two impressive home victories over Boise State on Friday and Colorado Saturday afternoon.

The win against Boise State was BYU's first home victory of the season.

The Cougars swept the singles and lost only the No. 3 doubles on their way to the 8-1 win.

The winners for the Cougars in singles competition were David Harkness, Rob Fought, Rich Bohne, Andy Noorda, Brien Sullivan and Robert Garbell.

Harkness and Paul Steele combined for a win in the No. 1 doubles spot while Noorda and Bohne teamed for a win in No. 2 doubles.

The loss was the first of the season for Boise State, 4-1, which had defeated Big Sky champion Weber State 5-4 last week.

Cougar sophomore Greg Hayward did not play against the Broncos because he was recuperating from a bout with the flu.

"We were pleased we got a chance to play a lot of our team," said BYU Coach Larry Hall. "Boise State was a good team, but we are playing well

right now."

In their match Saturday against Colorado, the Cougars played more fine tennis as they routed the Buffaloes 3-0.

BYU's win dropped Colorado's record to an even 4-4 on the year.

"We really didn't know what to expect in playing Colorado," said Hall.

One aspect that particularly pleased Hall was that he, once again, had the opportunity to put in a lot of players during the matches.

"This will really help strengthen our younger players for future matches," Hall said.

One of the bright spots for the Cougars was the play of Robert Garbell, who filled in for an injured Dave Harkness. Harkness injured his ankle during a singles match with Bob Bateman of Colorado and was unable to play his doubles match.

"It looks as if Dave sustained a bad ankle sprain," said Hall. "We hope he will be back for our upcoming matches this week."

BYU's next match will be Wednesday afternoon at the BYU Indoor Courts when Weber State comes to town. The matches will begin at 12:30 p.m.

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ASSOCIATED STUDENTS

LIFESTYLE

FLC offers 'broad knowledge'

By JANICE GARDNER
Staff Writer

The BYU Family Living Center is not a real department, but it performs a specific function in the university organization.

"It really isn't like a department because we don't have any faculty, and we don't have a graduate program," said Dr. Wesley Burr, director of the FLC.

The center has the money to pay for teachers but has no regular staff, so faculty who are qualified to teach the classes are brought in from other departments, he said.

The center was organized in 1981-82 to prevent class duplications and to provide a more functional and liberal arts-oriented education.

"Over the years, different departments have offered family classes," said Burr. "Each did their

own thing in the department, and there was a lot of overlap and duplication."

For example, there were three different classes on sex roles, and two departments had parenting classes.

Another reason for creating the center was there was no longer a need to compete for students, Burr said. All judgments about resources were once based on the number of students enrolled, but that has changed to an evaluation of the quality and function of a class or department.

As a result the College of Family, Home and Social Sciences was reorganized. "The individual departments handle the professional programs, which have clear career tracks outlined, and the Family Living Center was organized to separate out the service function of how students can improve their own lives," Burr said.

Five majors were discontinued, and a family living major was created for those students wanting a

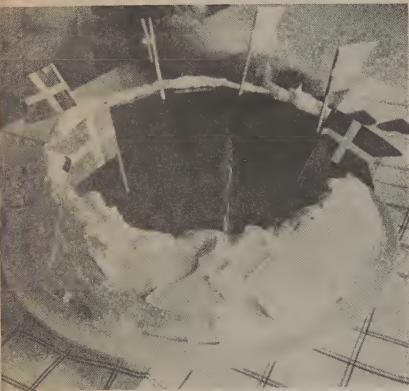
more liberal arts type of degree, he said.

"The person is not trained for one particular career like in nursing and engineering that have a clear track, but we train the person to be broadly educated and to have a broad knowledge," Burr said.

According to Burr there is a debate in the university circle about whether a person is better off with a broad or narrow type of education to prepare himself for a career.

The center has a more streamlined curriculum and has condensed 20 classes into eight, Burr said. Those persons majoring in family living also take liberal arts classes from other departments, which are designed to teach them how to think, be creative and analyze. They also take electives that provide depth in an area of the social sciences, he said.

A family living major can find a career in almost any area of the job market because there are a lot of careers that demand a broad knowledge, Burr said.



Universe photo by Richard Porter
'Lagkage,' a traditional birthday cake in Denmark, boasts a thick filling of whipping cream, fruit and vanilla custard.

Danish layer cakes feature moist filling

By ETEL BARBORKA
Lifestyle Foods Editor

The most traditional birthday cake in Denmark is a "Lagkage" or translated to English, a layered cake, according to Kaja Hall, a graduate student in TESL, from Denmark.

The white cake layers or "Rundstykker" in the birthday cake are usually bought in the bakery, which opens at 6:30 a.m., said Hall. The birthday cake is assembled later in the home. Here in Utah, Hall substitutes these rundstykker with a white cake mix.

Danish cakes are not as sweet as American cakes, according to Hall. A traditional Danish cake has several layers with a thick filling of whipping cream, fruits or jam and vanilla custard, making the final product moist and less sweet than American cakes.

Kaja's Lagkage recipe calls for one cup of white cake mix, one package instant vanilla

whipping cream, one cup of pineapple, one cup powdered sugar, one cup chocolate powder.

Follow the instructions on the mix. Let the cake cool before cutting into 8 layers, each 1/2 inch

2. Drain the juice from the crushed pineapple.

3. Follow the instructions on the instant pudding mix, but decrease the amount of milk from 3 cups to 2 1/2 cups.

4. Whip the cream, without adding sugar, until the cream gets so thick the bowl can be turned upside down and not lose any. Lastly, mix half of the whipped cream with the already mixed vanilla pudding.

5. Sift the powdered sugar and chocolate into a bowl. Carefully add enough water, while stirring, to make a smooth mixture.

6. All ingredients are now ready for assembling. Place the bottom part of one cake layer on a plate.

7. Spread half of the crushed pineapple evenly over the top. Cut one banana into 1/4 inch thick slices and place on top of the pineapple.

8. Evenly spread half of the vanilla custard and whipping cream mixture on top of the bananas.

9. Cover with the next cake layer and repeat steps 7 and 8 until completed. The final cake layer should have a smooth surface facing up.

10. Evenly spread frosting on the top of the cake and the remainder of the whipping cream along the sides of the cake. Decorate with candles or flags.

Early notations trigger miniseries

NEW YORK (UPI)—Decades-old early notations about a chance encounter with a member of the first U.S. Olympic team triggered filmmaker Gary Allison's idea for a miniseries, "The First Olympics — Athens 1896," to be aired May 20 and 21 on NBC.

Allison began work on the five-hour miniseries almost eight years ago.

In search of a story of his own, he turned to the diaries he has kept since he was a young boy.

"The minute I landed on it, I knew

it was wonderful," he said.

The notations described a chance meeting he had in the early 1960s in Maryland with Robert Garrett, who won gold medals — actually silver then — in both the shot put and discus competition in the 1896 Games.

Garrett was not the first member of the 1896 U.S. Olympic team whom Allison had met. In 1956, he met William Welles Hoyt, 1896 pole vault gold medal winner, at a party given by Allison's parents at their California home.



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Count Almaviva (left), played by Michael Beinap, employs Figaro the barber (right foreground), portrayed by Jon Linford, for his matchmaking abilities in the BYU production of "Barber of Seville."

'Barber of Seville'

Show centers on antics of love

By EILEEN TRUJILLO
Senior Reporter

Rossini's opera, "Barber of Seville," made its debut Friday night at the Nello Experimental Theatre.

With the child-like setting, the opera began rather oddly yet because of the simple plot the end seemed comfortable.

The show, with a set designed to look like children's building blocks, began in the square in Seville outside the house of Dr. Bartolo, the opera's villain.

Enter Count Almaviva, played by Michael Beinap, who is hopelessly in love with Rosina and must win her love.

displays his greediness. Yet the vocal duo that ensues with the two men is lacking. Figaro overpowers the Count along with the piano. However, on their strong notes their voices blend very well.

The second scene was enjoyable for both the audience and the actors. The setting was in a room in the house of Dr. Bartolo where the Count, alias Lenardo, poses as a drunken soldier.

A loud argument between the Count and Bartolo begins — only to be ended by the police.

In his second attempt to win Rosina, the Count poses as a pastor of music, and with the help of Figaro, finally gets word to Rosina that he wants to take her away and marry her.

In the last act, set in the music room of Dr. Bartolo's house, the small Figaro devises a plan to help Rosina escape from the villain Bartolo.

The great escape is humorous with the small leader instead of a long one leaning up to the window. The gestures Figaro makes as Rosina and Count Almaviva express their love for each other are very funny.

Bartolo, thinking that he has trapped them in the room, steals the ladder and runs for the police.

Meanwhile the lawyer and the music master to Rosina, Basilio —

played by Barry Bounous — enters and marries Rosina and Count Almaviva unintentionally.

While the opera was slow in starting, by the second scene the audience enjoyed both the strong voices and acting offered by most of the actors.

Bartolo especially stole the show. He was a true villain in every sense of the word, from his sour facial expressions to his disgusting gestures.

Figaro, also especially liked by the audience, had a very strong baritone voice, portrayed his part well and had very good diction. There were only a few times when breathlessness interrupted his vocal strength.

Rosina provided a lovely, strong voice to the show, but her acting was not very realistic.

Alan Ord, the director of the opera, said he felt the performance went very well.

While the show was not devoid of a few opening night jitters, according to Bounous there are usually things that go wrong all during rehearsals and on opening night an actor becomes very alert at those trouble spots.

"But it's really the common things we do that we missed a few times."

However when the curtain came down the audience as well as the actors were pleased with the performance.

THEATER REVIEW

The baritone voice of Seville's barber and matchmaker Figaro, played by Jon Linford, bellows from behind the audience. He appears in his funniest manner with a song for the audience.

Dr. Bartolo, played by Michael Wadsworth, is the physician, villain and guardian of the woman he also loves, Rosina.

And here is where the conflict begins as both Count Almaviva and Dr. Bartolo try to win the heart of Rosina, played by Anna Mooy.

In his attempt to win her love Almaviva poses as Lenardo, a student, in hopes that Rosina will fall in love with him as a person and not his status in life.

One of the funniest scenes occurs when Figaro, who is paid by the Count for his matchmaking abilities,

Y grad up for Academy Award for editing work on 'Right Stuff'

By PAM PARKS
Staff Writer

Filming in an Idaho sugar beet refinery contributed to the experience that put film editor Glenn Farr where he is today.

Farr, a 1968 BYU communications graduate, is up for an Academy Award nomination for editing the movie, "The Right Stuff."

"Film editing is something I've been interested in since I was a young teenager. I was very curious about the process, but I didn't take it seriously until I came to BYU," Farr said.

While at BYU, he worked part-time at the movie studio as an editor and actor in many religious films. Farr was an extra in one such film which starred on the trip of Joseph Smith.

Encouraging teachers Farr said it was the encouragement that he received from BYU instructors, however, that prompted his decision to choose a career in film editing.

"It wasn't the technical aspect at BYU, it was the joy of what was communicated. That really drew me on and I thought it would be great to make movies," Farr said.

"I was excited for a young, tender-footed filmmaker like I was to gain this experience," Farr said. "It was something that put me over the edge and made me believe that I could actually do this for a living."

He said that the education he gained at BYU gave him a taste of the process of filming rather than the hard-core industrial filmmaking, and he feels this is the most productive education for aspiring filmmakers.

"I have an idealistic view on the goal of working with film," Farr said. "If an individual wants to work in motion pictures, he should have an emphasis in speech, English, foreign language and acting."

Most important, he should be involved in creative writing and he should have a good understanding of the working language.

"It's also a question of really being persistent. If an individual really has a desire, he'll be where he wants to be."

Farr said he does not think it is wise to major specifically in television or motion picture production. The development of talents in English and writing is the main issue.

"Movies aren't usually made about movies," he said. "Just to express an interest in movies isn't enough. A person who is interested in producing films needs to look into the areas of TV and learn the nuts and bolts of the trade."

Farr said that practical experience in filmmaking is the most valuable asset to the beginner. He said that while learning the nuts and bolts is important, grasping the concepts behind the movies is even more important.

Referral system

"A filmmaker's previous work becomes his referral system. If someone sees a movie that I edited, he may feel that the work is appropriate for his project. Usually, someone will call a filmmaker because he likes his work or because he has a good

reputation for being easy to get along with."

The relationship between the director and editor is crucial. Once a filmmaker establishes a referral through his films, it takes both skill and compatibility to get hired, Farr said.

"Someone must have seen the 'Right Stuff' and felt that the working with stock footage and special effects would be appropriate for his project. There are some basic similarities between the 'Right Stuff' and 'Space,' the film that I'm working on now," he said.

"Editing is a hands-on kind of thing," he said. "Film editing can be learned (in part) by going to a lot of movies."

"When a filmmaker thinks he is ready to break out on his own, he should take any job he can get. He needs to get in and get his hands dirty."

"Above all, don't be afraid to take a low-paying job. If a graduate from the engineering school is making \$30,000 a year and a filmmaker is making \$10 a week, it doesn't matter because the films are the filmmaker's referral."

After Farr left BYU in 1968, he went to Los Angeles and began working for a radio station as a mail boy. "I hated it. I was the person that everybody dumped on. However, I feel that it was a good experience. I found out that I have to do something I enjoy in this field," Farr said.

Then Farr enrolled in the University of California at Los Angeles master's of fine arts and cinema program. "All the while, I was looking for work. I dropped out of the advanced graduate study program to become an assistant film editor for John Urie and Associates. It was there that I began working on TV commercials."

Farr worked on 25 to 30 films during this time, doing everything from being an assistant cameraman to assistant editor.

"John Urie was a launching post for me," Farr said. "While I was there, I worked on entertainment documentaries, entertainment variety specials and a biography of Bing Crosby."

Farr concentrated heavily on filming rock movies also. "Let the Good Times Roll," a two-hour film titled, "Heroes of Rock and Roll," and two 1980 features, "This is Elvis" and "Elvis on Tour," are some of his works. Record promos for "Jefferson Starship" are also included in his background.

After Farr's rock period, he began editing other works such as "Divine Madness," starring Bette Midler, and "Gospel," a movie concerned with rhythm and blues gospel music.

He worked on "National Geographic," "Harry and Tonto" and "Next Stop Greenwich Village" during this period.

"The Right Stuff," Farr's latest project, is widely appealing because of its subtle patriotic theme, he said.

"I feel honored to be nominated for the Academy Award. It's much greater than anything I imagined. A lot of editing and work went into the 'Right Stuff.'"

"I think the positive nature of the film could be a plus in winning the award. People who like it say

that the film makes them proud to be an American," he said.

"America has gone through a lot of pain and spiritual suffering and the film is inspiring through its subtle, sophisticated patriotism," Farr said. "The film is a tremendous accomplishment in editing and it inspires people about America."

"Space" is Farr's current assignment, which he began working on two weeks ago when he joined the staff of Paramount Studios. The film is a 12-hour talk-off from James Michener's novel by the same title.

"I have no regrets. I'm very happy with the choice I've made to become a film editor," Farr said. "There are other things that I'm interested in, but my career is very fulfilling. Probably the most rewarding thing is working with a lot of talented people in all areas of the process."

"When I go to a theater and sit with the audience and they don't know who I am, it's great to see them respond to the film."

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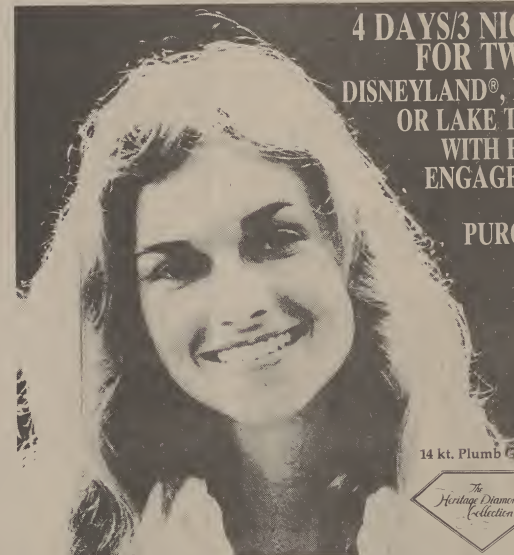


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Explosion victim recovering

JOHN CATRON

unday Editor

In July 5, 1983, Provo's Freedom Festival celebration at Kiwanis Park ended into a nightmare when a Civil War cannon exploded in the face of Ken Huff.

Huff, 39, was one of about forty at a reenacting Civil War battles. His job included loading and swabbing the authentic reproduction of a cannon.

After swabbing out the barrel to move sparks left over from the previous blast of the cannon, Huff was aiming a half-pound charge of gunpowder into the barrel with a 5-foot wooden ramrod.

A dislodged spark from the touch of Huff's apparently ignited the powder in the cannon exploded in the face of Huff—blowing the 5-foot ramrod into tens of thousands of splinters. Only a 1-foot piece of the ramrod was found intact.

Doctors found more than a hundred of the splinters in Huff's left eye and face. The right eye was completely blown away. The heat of the explosion melted Huff's fake teeth.

Spectators at the scene dumped out coolers and began picking up the bits of fingers and skin of Huff's hands in hopes of saving them for doctors to sew back.

Both hands, however, were irreparable. For many of the spectators at Kiwanis Park, the Fourth of July celebration had been ruined, and they left without waiting for the fireworks later in the evening.

For Ken Huff the battle had just run. Huff needed 9 pints of blood and was placed in critical condition at the Utah Valley Hospital. Huff's wife, Susan, was told at the park not to expect her husband to survive.

Huff lay in Utah Valley Hospital for three weeks—some of the time in extreme critical condition.

Then the long road of rehabilitation began for Ken Huff. Seven months down the road Huff has received an ear drum transplant, a glass eye, and two artificial hands.

The hands are battery powered and cost \$17,000 with the attachments that Huff will receive later. Attachments will include a set of heavy-duty metal grips for around the house and industrial work, and a special attachment for bowling.

For now, Huff's temporary hands have only pinch power that allows him to grip objects. He cannot, however, do things such as button his shirt and remove items from his pockets.

Huff is using the hands for several months to accustom himself to using the muscle action that operates the controls. He will then receive his finished hands that have knuckles and wrinkles on the fingers just like ordinary skin.

Even though his hands are made of plastic and metal, Huff said his fingers still start to hurt late in the evenings.

"According to my brain, my hands are still there," he said. Huff retains only 5 to 10 percent eyesight out of his left eye, allowing him to see only the outline of shapes.

On his daily walks to the corner grocery store, Huff has to use a white cane to let people know he cannot see. "I can only see cars when they are right on top of me," he said.

Unlike many amputees, Huff said he did not feel a letdown after losing his hands and most of his eyesight. Support from his family and the community are part of the reason Huff is positive about the future.

Huff's hospital bills have reached \$25,000 for the injuries and rehabilitation. Donations from the community and people all over the United States have allowed the Huffs to pay the bills.

"Without the people we never would have made it," he said. "About 95 percent of the people accept the handicapped person and they go out of their way to help," he said. The reactions of the other 5 percent do not affect Huff anymore.

"It bothered me for a little bit, but you get used to it." "Most people look at what happened to us and they say 'We couldn't live through that,'" Mrs. Huff said. "Well, we had to live through it. It was either that or crawl up in the corner and die."

The adjustment has been hard, but not impossible, for Huff's wife and family. "I married his heart, not his hands," Mrs. Huff said.



Ken Huff, seriously injured in last year's Freedom Festival at Kiwanis Park, has fought a battle of rehabilitation, including an ear drum transplant, a glass eye and two artificial hands.

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Reagan to get assistance from women professionals

WASHINGTON (UPI)—Republicans have their answer to the gender gap—a group of women who will campaign for President Reagan as the "champion of working women."

Betty Heitman, co-chairman of the Republican National Committee, appeared at a news conference Thursday to present two dozen professional women who will travel the country campaigning for the president as part of the RNC's "National Women's Coalition."

"The Democrats are not the party that has done the most for women," she said. "We are."

She said that those in her coalition take exception to "the Judy Goldsmiths of the National Organization for Women and the Kathy Wilsons of

the National Women's Political Caucus when they imply that women do not possess the inherent skill, motivation and education to succeed in today's world."

Later Wilson responded in a telephone interview: "What nerve!" she said. "To suggest that women leading the women's movement don't have confidence in women is like suggesting Ronald Reagan doesn't have confidence in Yankee ingenuity."

Both NOW, which has endorsed former Vice President Walter Mondale for president, and the women's caucus, which has made no presidential endorsement, favor the Equal Rights Amendment. Reagan does not.



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Candidates give arms control views

1984 PRESIDENTIAL ELECTION

KARI BAUER

Senior Reporter

Nuclear arms control is an election issue that appeals both to the logic and emotions of people around the world. In reaction to President Ronald Reagan's pro-nuclear weapons policies, citizen's groups across the nation have been active and vocal on both sides of the debate.

In the aftermath of the Vietnam War, support for national defense deteriorated and defense funding declined as a percentage of the gross national product. It was a broad national consensus for substantial increases in defense spending that helped gain elected in 1980. The Reagan administration has since placed substantial emphasis on the ending and deployment of nuclear weapons. Hot debate and criticism have followed, with each 1984 presidential candidate taking a firm stance on the issue.

REUBIN ASKEW: As skew differs from his Democratic colleagues and denounces a nuclear freeze. Saying that a freeze will not result in effective arms control; As skew claims it will put pressure on the United States and none on the Soviet Union.

He favors canceling the B-1 bomber, putting off missiles on B-52 bombers, and accelerating efforts to develop the new Stealth bomber.

GEORGE MCGOVERN: McGovern has called for the beginning of a nuclear freeze and for the cancellation of the MX missile and B-1 bomber. He feels that along with an overhaul of the military procurement practices and weapons testing practices that the missile deployment in Western Europe should be stopped. He proposes cutting military spending in the range of 20-25 percent.

GARY HART: Hart has called for an immediate, verifiable bilateral nuclear freeze, which he says is a fundamental first step to providing both sides an opportunity to consider seriously the proposals of the other side without fearing an arms buildup by the other. Hart led the Senate fight to stop deployment of the MX missile.

ALAN CRANSTON: Cranston says he is basing his campaign on stopping the nuclear arms race. As the leading advocate for ratification of the SALT II treaty in the U.S. Senate, he also co-sponsored the Nuclear Freeze Resolution. He believes the single most important job of the next President will be to arrange a fair and verifiable nuclear arms freeze agreement with the Soviet Union.

ERNEST HOLLINGS: Hollings supported the unilateral Nuclear Non-Proliferation Policy of 1981 and has proposed a freeze on the defense budget for one year at 3 percent real growth—the annual NATO commitment. He opposes the MX missile and B-1 bomber and supports mutual and verifiable arms limitations.

RONALD REAGAN: Reagan has stuck by his goal of increasing defense spending by requesting \$275 billion for fiscal year 1984, an increase of 10 percent. The President strongly supports the B-1 bomber, the MX missile, the F-18 and immediate surface shipbuilding. He has finalized plans for and begun the missile deployment in Western Europe.

Reagan has pledged to match the Soviet Union defensively in order to ensure national security. WALTER MONDALE: Mondale proposes an

unequivocal commitment to the nuclear freeze, meaningful arms control, a reasonable military budget, and a foreign policy "that expresses the highest values of America." He calls for an end to the proliferation of nuclear weapons.

JESSE JACKSON: "Nuclear war is much too dangerous, much too costly and—given the margin of error—much too likely. While I support mutual and verifiable arms reduction and would never endanger the nation's security, we must be willing to take

some risks for peace." JOHN GLENN: Glenn has called for a comprehensive arms control program that includes an immediate, mutual and verifiable freeze on the production and deployment of nuclear weapons and reductions in U.S.-Soviet nuclear arsenals. He also favors an end to the spread of nuclear weapons technology by strict enforcement of the nuclear non-proliferation legislation he authored in the Senate.

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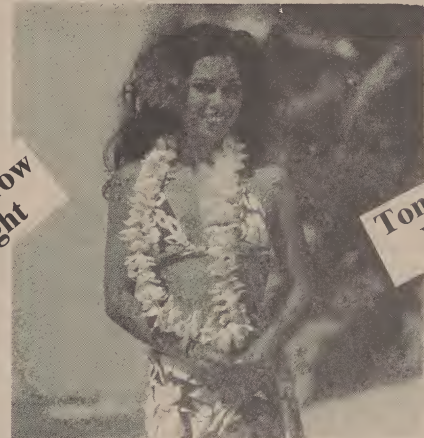
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Human testing to begin

Artificial blood vessels ready

By CLARK MORGAN
Staff Writer

Artificial blood vessels developed at the University of Utah are being manufactured by a recently formed Salt Lake City company and could be ready for testing in humans as early as next month. Although large-diameter artificial vessels have been used for some time, the new vessels have proven successful at diameters of 4 millimeters and smaller.

Dr. Donald Lyman, a professor of material science and engineering at the U of U, and a colleague,

Dr. Dominic Albo, headed a team of scientists who became the first to use the concept of a flexible artificial vessel. The vessel developed by the Utah team pulsates with the natural vessel as blood surges through it.

Polymer surface

The group also succeeded in engineering a polymer surface that avoids blood clotting. This advance makes artificial blood vessels of extremely small diameters possible.

The current surgical solution for bypassing blocked blood vessels or replacing damaged veins is to use one of the large, superficial saphenous veins

from the patient's own leg.

"Some patients do not have satisfactory veins for transplants," said Albo. "And even when the saphenous veins are good, this procedure significantly increases operating time."

Albo noted that surgeons have been using Dacron implants since the 1960s. But he said Dacron was only effective in large diameter (8 to 30 millimeter) blood vessels.

Better option

The development of a satisfactory small diameter artificial vessel would give the surgeon a better option for thousands of patients, he said.

According to Lyman, most grafts fail because of clotting problems originating at the junction of the graft and the natural vessel. The researcher said the problems arose from a mismatch in flexibility.

Copolyurethane

To overcome the problem, the Utah team developed a copolyurethane into a graft that is opaque, white, spongy and elastic.

The surface of the polymer was also engineered to preferentially bind the protein albumen. The team's studies had previously shown that platelets in the blood do not adhere to albumenized surfaces. The albumenized surface successfully prevents clotting in the artificial vessel.

"We now have a polymer material that is functioning, but it is not perfect," said Lyman. He noted there were still minor problems with the artificial vessel at the juncture with the natural vessel.

Vessels successful

The vessels, which have functioned successfully in dogs for more than two-and-a-half years, received the Food and Drug Administration's approval for tests in human patients last December.

Lyman was hopeful that the new vessels could be tested in humans as early as next month. If the tests are successful in humans, the FDA can then give approval for the artificial vessels to be available to any surgeon.

"When tests begin in humans, we will extensively analyze the artificial vessel's mechanical properties and elasticity," explained Lyman. "We'll also determine the role of the healing process in successful grafts, since our animal studies show that healing is different for each species."

Lyman also heads up the new company that began producing the vessels last month in order to supply the tests in humans.

Lyman said researchers at the U of U intend to make the first implants in humans. But Japanese and French colleagues had already shown interest in obtaining the new blood vessels, he added.

U of U confirms in vitro pregnancy, third success in test tube program

SALT LAKE CITY (UPI) — Doctors at the University of Utah Medical Center say they have confirmed a third pregnancy in their in vitro fertilization program.

Shellie Clinton was the first woman to become pregnant through the medical center's program. She gave birth to a girl Jan. 27. The second woman to become pregnant in the program had a miscarriage.

The in vitro process involves merging a father's sperm and the mother's egg in a laboratory. The fertilized egg is then placed in the mother's womb.



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Researchers at the University of Utah Biomedical Engineering Center for Polymer Implants have developed extremely small polyurethane vascular grafts, like the one shown lying on the penny in the picture, to repair damaged or diseased blood vessels. The smaller size allows surgical repair in areas where other types of artificial vessels do not work.

Task force tackles budget amid partisan accusations

WASHINGTON (UPI) — With little progress to show for two previous meetings, a bipartisan task force on the budget agreed to resume work — its mission colored by White House charges of Democratic footdragging.

White House spokesman Larry Speakes said the Democrats have yet to respond to a GOP plan offered at the first meeting Feb. 8, which the administration contends would reduce the federal budget deficits by \$100 billion over the next three years.

"Democrats, however, have said that most of the cuts proposed in that GOP plan already are counted in the Reagan budget."

Speakes also suggested that Democrats, in being slow to send ranking members of key financial com-

mittees to the meetings, have failed to show a sincere desire to work with the administration on a deficit reduction plan.

"If they were at all serious, they would bring their key jurisdictional chairmen in, who can talk turkey about what we can do on these various programs that are before the panel," Speakes said. "If we did have these people, it would be helpful, because they are the people who are going to have to make the decisions."

The panel, proposed Jan. 25 by President Reagan, held its second meeting Thursday, as impatient congressional committees began moving ahead on their own with plans to reduce the \$180 billion-plus deficits.

British discover Soviet spy ring used in Cyprus

LONDON (UPI) — British intelligence has broken a "Mata Hari" Soviet spy network in Cyprus where sexy barmaids attempted to blackmail British soldiers into giving them classified information, The Daily Mail reported today.

"Several young airmen have already been sent back to England after telling officers of spy approaches," the newspaper said.

The nationally circulated newspaper said the typical trap was set by an attractive woman working as a barmaid, or simply as a client at a disco or club popular with off-duty servicemen on the Mediterranean island, where Britain maintains military bases.

"She asks the young man home, encourages him into a compromising situation then springs the trap with an angry husband," who suddenly appears threatening divorce proceedings and publicity," the paper said.

The Daily Mail said blackmail was also attempted after a hidden cameraman photographed the couple in bed.

The paper said that in every case, the young men who reported the incidents were immediately sent back to Britain to be reeducated.

It said a team of agents from MI6, Britain's counter-intelligence service, flew to Cyprus and broke the sex and blackmail network.

"The British intelligence teams were surprised by the old-fashioned 'Mata Hari' techniques being used by the Russians and their hired agents," the paper said.

Mata Hari was a Dutch double agent who worked for both the Germans and the French in World War I. She was executed by the French.

Britain's Royal Air Force base at Akrotiri was the supply base for British troops recently in Lebanon. The base is also used by U.S. planes monitoring the Lebanese situation and the Iran-Iraq war, the newspaper said.

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Amputees enjoy new 'bionic' limbs

By BRI BAUER
Reporter

At six years ago, Alice Olson, of West Ore., was wearing a machine made of glue on plywood sheets. The machine, somewhat like a giant clothes washer, caught the glove tip on the left hand and pulled the arm on the rollers. Due to severe damage, the arm was amputated. The machine was very difficult for an amputee — not only because of the weight and difficulty of the machine on everyday life, but for other reasons as well.

Olson is fortunate. Though her arm can never be replaced, she is what is currently the next best thing.

First electric system
In 1982, Olson was the first amputee to be fitted with the first "electric elbow" and hand system in the world.

Developed by researchers at the University of Utah Center for Biomechanics, the limb uses the Utah arm that was introduced in October 1979 by Dr. Stephen C. Jacobsen, director and founder of the center. The Otto Bock Hand, developed by a West German orthopedic center, was the first to be used. Jacobsen first began working on an artificial arm that could be controlled in a natural way when he opened his center in 1978.

Easy repair
Designed in modules for easy replacement, the arm takes the place of the electrical signal that the amputee generates as they contract. The prosthesis is fitted on a myoelectric arm, the amputee flexes his muscle just as he would with a natural arm. The electrodes pick up electrical signals and send them to a microcomputer located in the elbow. The computer translates the signals to a command that the elbow's up and down motion, and elbow flexion. The process is automatic, Jacobsen said.

For the upper-arm amputee, the electrodes are placed on the remaining deltoid muscle at the shoulder. The arm can lift four pounds and do 50 pounds when the elbow is in any one of 21 positions. When the elbow automatically locks, the signals aren't being used, "they're still available," said Jacobsen. "The additional circuits are the control to be transferred to hand."

Motion, grasping
The essentially controlling two aspects of freedom — motion in the natural grasping of the hand and the same control sites," he said. Amputees don't have to learn complex instructions or body movements to use the Utah Arm, Jacobsen said. "Prior to the development of the Utah arm," an amputee often had to hold his prosthesis with an awkward motion of the body — rounding the

shoulders, for example, would activate cables that flex the elbows or open a split-hook hand.

The conventional arm was difficult to fit on women who had one shoulder missing, according to J. Thomas Andrew, a MedArts, Inc. prosthetist who fits the artificial arms. There was no limb remnant on which to suspend a socket and the bulky, heavy limbs were prone to fall off.

"Shoulder-level amputees benefit most from the Utah Arm, because it takes less physical energy to work it and it functions without gross body motions," he said.

The artificial limb is quiet, lightweight, controllable and reasonably strong.

The hand first became available in 1982. Weighing 1 pound, it contains electric motors, reduction systems and metallic fingers. A cosmetic glove is then pulled over the components. Since there are no control cables, amputees have more shoulder motion freedom and less discomfort.

Smooth movement
Movements of the hand are proportional and smooth. With the gear ratio changing automatically, amputees can control how fast or slow it operates. To a certain extent, the grip can be hard or soft. Technically, the artificial hand grips at 22 pounds of "pinch force maximum" in low gear. In comparison, the natural hand grips between 15 and 20 pounds.

"A natural hand doesn't need 22 pounds to pick up most objects, because it's compliant and conforms to whatever it's holding," said Jacobsen. "But the artificial hand is vise-like, so it needs more force to hold things. You pick up and hold a styrofoam cup without crushing it, or easily crush a soft drink can."

As with the Utah Arm, the electronic circuits are tailored to each patient. Because the amputee's limb remnants, occupations and hobbies are different, the arm's external features and functions can be tailored individually.

Much more useful
Olson said she first wanted the arm and hand for cosmetic reasons, "but I've found it's much more useful for things I do every day, like opening jars, slicing vegetables, putting makeup or holding a cup of coffee," she said.

"The more I practice using the arm and hand, the less I like going out in public without it," she said. "When I first got the hand, my mind rejected it because I knew it wasn't supposed to be there. But it looks so real that as I get accustomed to it, the more natural I feel with it."

Breakdowns 'no problem'

Olson said breakdowns, which happen infrequently, are not a problem because of the modular design. "Generally I can handle any problem over the phone, or they'll send me a module through the mail, and I replace it myself."



Above: Alice Olson of Westfir, Ore., is able to perform everyday activities with her "Utah arm." She is the first amputee to be fitted with the only totally electric elbow and hand system in the world.

Right: Former BYU student Kim Shipman of Ethel, Wash., uses her prosthesis developed at the University of Utah to hold a kitten. The arm is controlled by electrodes, which pick up electrical signals from the brain to the muscles in the amputee's limb remnant.

According to Jacobsen, future plans for hand improvements will include touch sensors to give people an idea of how hard they are squeezing and a hand system that is considerably lighter. The drive system will be shifted toward the elbow to reduce weight at the end of the hand.

'Degrees of freedom'

"The end objective is to have all four degrees of freedom available in combinations, depending on what the prosthetist wants to do for the problems of specific amputees," said Jacobsen.

"In the future, with multiple electrode sites, we can offer simultaneous hand and elbow, simultaneous elbow and humeral rotation, then switch over to simultaneous wrist and hand."



Artificial tube in planning process

Answer to infertility may be found

By ANDREW MILLER
Reporter

An artificial fallopian tube being developed at the University of Utah may be the answer to the largest cause of infertility in the United States, which affects more than 100,000 women.

Blocked or damaged fallopian tubes are the most common problem leading to the inability to conceive, according to Steve Hunter, professor and chief developer of the artificial fallopian tube.

Recently, women afflicted with ineffective fallopian tubes were given no alternatives by medical science. The artificial fallopian tube, a device in research made to replace the function of the egg in the body, and the future looks bright for continued progress in in vitro fertilization, or test tube babies. Women who are eligible for in vitro fertilization will also benefit from the artificial fallopian tube, said Hunter. The tube could be permanently implanted or removed after a pregnancy. This could be used as a possible control method for women. The artificial tube will not resemble a natural fallopian tube.

The target date has been set for implementation. "I don't want to give false impression that we're figuring out all the obstacles," Hunter said. "We're just getting off the ground — it's in the planning stage, and we have a long way to go."

The current obstacle is finding the amenable material for the egg and embryo. Eight different materials are now being tested.

The tubes have previously been made of silicone rubber. The major

task of the research team now is to find a material that would be more conducive and compatible. "If we find something better we'll shift to that material and start making the entire device out of it," said Hunter.

One of the eight possible substances that may be used is polyurethane.

Problems associated with the tubes include providing the nutrient medium to the embryo and providing mobility for the egg to get from the ovary to the uterus. "About a year ago the ideas finally all fell into place. That's when I started talking to other people, getting other ideas and trying to build a team to work on the tube and get financial backing," he said.

There is no approximation of the final cost for the artificial device. "I couldn't even speculate a guess on cost," Hunter said. "It depends on what we have to do to make it work. The more complex it has to be, the more expensive it will be."

If everything works out as planned, the tube may not be very expensive. "The initial surgery and implantation will be really the only cost," said Hunter.

"I'm not saying that it's going to be real cheap, but I will say it would be cheaper than the in vitro fertilization that is done today."

As with any product, whoever can build the best and cheapest version has the advantage. "That is the risk with research. The people today aren't just sitting around on their butts not trying to make it better and less expensive," Hunter said.

He said the artificial tube may not be competitively priced at the start because advancements may also occur in the field of in vitro fertilization.

Implants have already been completed on rabbits, with some of the animals promising, others not, Hunter said.

To overcome some of the negative results, sheep will be used for implants.

The main purpose of the implants in animals is to test the surgical techniques and check for problems that may have been overlooked. But, "it may even be some time before we try to get the animal pregnant," Hunter said.

There is no target date for human use by the research team. Before a human implantation can take place there are many steps the research team has to pass through. The Federal Drug Administration has to give their approval, then the Institutional Review Board approves or rejects the procedure.

Every step of the procedure is heavily documented. "We have to show successful animal experimentation and prove the device is safe to the mother and infant and doesn't cause any birth defects," he said.

Hunter began thinking about the

fallopian tube while working with the artificial heart about seven years ago. He said, "You hear of a bodily function that doesn't work anymore and just automatically start asking the question, 'What can we build to replace it?'"

Hunter received his first grant from the U of U to get the project off the ground. A request for a grant has also been submitted the National Institutes of Health.

If the grant fails, there is a possibility of private funding or setting up some type of business.

Hunter will be filing for a patent on the artificial device in the next four or five weeks.

Last month Hunter received the Fellowship Award from the Artificial Internal Organization. The award is given to students or post-doctoral candidates. Only Medical Doctors in residence are eligible.

"I was the only recipient with a bachelor's degree. It was kind of exciting," Hunter said.

Trauma victims requiring blood have few options

By ED ROGERS
Staff Writer

A trauma victim who has lost a large amount of blood and refuses to receive a blood transfusion has a few alternatives available, said Dr. Alan Toronto, a cardiologist at the McDonald Health Center.

Blood substitutes have proven effective in trauma situations. The first person to receive a blood substitute was Haldor Mickelson, a member of the Jehovah's Witnesses faith.

Because of a belief of not receiving blood from another person, Mickelson refused to receive a blood transfusion, and on Nov. 14, 1979, he was given four pints of a blood substitute. Toronto said that if Mickelson had not received the substitute he probably would have bled to death.

The research and development of perfluorocarbons used in artificial blood began in the 1940s with the Manhattan Project and the production of the atomic bomb. Now, more than 40 years later, this substance is being used to create a blood substitute.

"The substitute is not a whole blood, but an artificial oxygen transporting blood substitute," said Toronto. It acts as a short term replacement until the patient's body can reproduce the blood necessary to sustain life.

Toronto said that as the blood level in the body goes down, the substitute acts as an interim blood until the bone marrow in a patient's body can make new blood. The blood substitute eventually evaporates through the skin tissue and is replaced completely by whole blood produced by the body.

The main use for blood substitutes at this time is for Jehovah's Witness members who refuse to receive whole blood transfusions from other people, Toronto said.

Trauma victims are not the only patients who can use a blood substitute. The clear substance can be used during major surgery when large amounts of blood are required. It can be used to prime heart-lung and kidney dialysis machines. The synthetic blood can also be used for exchange transfusion for a newborn child with Rh factor problems and other complications.

A blood substitute is also useful for sickle-cell anemia patients in a crisis and for carbon monoxide poisoning and drug overdose patients. Patients receiving the substitute need to breathe pure oxygen in order to deliver enough oxygen to the body tissues.

The blood substitute is able to replace human blood as long as the patient is breathing pure oxygen, Toronto said. A patient must use pure oxygen until the body reproduces enough blood to deliver the necessary amounts of blood to body tissues.

Work on the blood substitute is continuing in order to perfect it. Once perfected, many of the problems associated with whole blood, such as blood typing, availability of donors, careful transport of the blood, a short shelf life and controlled storage, will be reduced.

The blood substitute could be excellent for third world countries, said Toronto. Countries that do not have the techniques for drawing blood nor the availability of donors in crisis situations will be able to use the substitute.

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Utah artificial hearts give hope

By FLORENCE MILLER
Senior Reporter

The Jarvik-7 and the Utah 100, developed by doctors at the University of Utah, are the hope for the future as mechanical substitutes for the natural heart.

Nearly a million deaths that occur every year in the United States can be attributed to heart disease, according to Dr. Robert K. Jarvik, developer of the Jarvik-7.

The death rate has been reduced somewhat by improved medical procedures, new drugs and pacemakers. And it could be reduced considerably more if individuals assumed greater responsibility for controlling such risk factors as smoking and inadequate exercise, he said.

As little as 10 years ago, no animal implanted with an artificial heart had survived for a period of more than three days. Today, the record stands at 221 days, or more than seven months.

With the success of the Jarvik-7 heart, doctors at the University of Utah have developed another artificial heart — the Utah 100.

The Utah 100 was recently implanted at the U of U in a calf named Johnny. The calf died Oct. 29, 1983, after establishing a survival record of 25 days with the new polyurethane heart.

Although the purpose of the Jarvik-7 and the Utah 100 are the same, the two are structurally different.

The Jarvik-7 is round in shape and design. According to Dr. Kevin Murray, general surgeon and principal investigator on the implant, this shape and design can create problems. Its roundness and height can interfere with the lungs, and also compresses the vessels so blood cannot get into the heart.

The Utah 100 is smaller in size, shorter in height and more elliptical in dimension. The shape allows the heart to fit into the chest cavity, making placement next to the lungs more conducive. However, both work on the same mechanical process.

The mechanical processes for both hearts are simple, said Murray. Inside each ventricle there is a diaphragm that acts like a balloon. The diaphragm expands and is compressed, pushing the blood into the pulmonary and systemic circulation. When the air supply is exhausted, the diaphragm collapses and allows the blood to enter the heart.

Not only do the Jarvik-7 and the Utah 100 have the same mechanical processes, but they are both driven by a compressed air machine.

With the advances being made in the field, the possibility exists that artificial hearts may become more common for heart patients than transplants.

The artificial heart has the potential of reaching a much larger population than heart transplantation,



The Utah 100 (pictured above) is so named because it displaces 100 cc. of blood with each stroke. The new elliptical shape allows a better anatomical fit in smaller chest cavities.

said Jarvik. "Artificial hearts could be made in large numbers, and so any level of demand could be met. Since these devices are made of polyurethane, there are no problems associated with immunological rejection."

With the number of people suffering heart diseases in the United States, there is an obvious need for a life prolonging device for patients with terminal heart disease.

Of people with transplanted hearts, 65 percent survive at least one year, and about 50 percent live five years or more.

Eighty percent lead normal lives and half of those who lead normal lives are able to return to work. Some recipients have survived for more than 10 years.

The artificial heart is becoming more of a possibility for heart patients, but even from the begin-

ning there were apparent problems with creating an artificial heart to replace the natural one. The device had to be small enough to fit in the space made available by the removal of the natural heart.

The artificial device has to provide enough output of blood to support the entire body, and the output has to vary according to the body's needs, said Jarvik. "It also has to be readily sterilized, and it had to be very durable."

Most importantly, the device has to have the capability of pumping blood gently enough to avoid hemolysis, or the destruction of red blood cells.

The main goals of the researchers of the artificial heart are to make the heart functional, reliable and dependable.

"When the artificial heart has been perfected, it must be made available in sufficient quantity to serve a large number of people," said Jarvik.

Y candidate violates bylaw; campaign time suspended

By CINDY CLAYTON
Staff Writer

A candidate running for ASBYU president was found in violation of an election rule and bylaw by the ASBYU Commons Court's Saturday.

The candidate was suspended four hours of campaign time on and off campus for prematurely announcing his candidacy, said Jeffrey Payne, ASBYU Commons Court's senior judge.

"Because only 25 people were at the public meeting where he announced his candidacy, the court feels he did not make a severe violation. We have, therefore, lessened his sentence from not campaigning the first day, to not campaigning from 8 a.m. to noon the second day," Payne said.

"The candidate does not need to take down his campaign signs; he just can't actively solicit votes," he added.

ASBYU Attorney General Clay Jackson said, that the incident stemmed from a refer-

ence made by the candidate at an Honors Student Council meeting concerning his candidacy for the ASBYU office.

Kent Larsen registered a complaint and asked that action be taken against him, Jackson said.

The candidate had been warned in a meeting with the elections' chairman to "watch what he said when discussing his proposal," Jackson said.

"The next day in a public meeting, he got up and stated that he was running for president. He must be punished for this violation or other candidates will announce their candidacy early also," he added.

The candidate in question said he couldn't recall announcing his candidacy. "Maybe I mentioned it, but that wasn't my intent. I had not planned to say anything about my candidacy. I had come to speak to the group about my proposal," Sam Cowley, ASBYU

General Attorney said whether intended or not, the mention of the candidacy violated specific election bylaws. "This announcement gave him an unfair advantage over the other candidates. "Any other prospective candidate that mentions the candidacy will also be prosecuted," Cowley said.

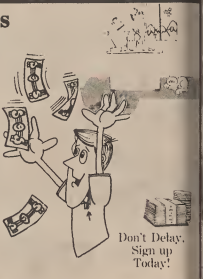
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Salt Lake doctor expresses concern

Implant decision belongs to society

By VERA MEADOWS
Staff Writer

The decision to implant a second artificial heart should be made by society, a Salt Lake physician said during a recent interview.

Dr. Robert G. Wilson, the immediate past president of the Utah State Medical Association, has become a spokesman for what he feels to be a growing group of Utahns who think there must be a way to assess the implications of medical research innovations.

Wilson made his statement while the University of Utah School of Medicine made a decision from the U.S. Food and Drug Administration concerning a second artificial heart implant. The decision is anticipated within the next few weeks.

"I am very much opposed to a second implant," Wilson said. "It is one of man's 'technological advancements' being thrust upon society."

"The medical people and the media have brought the issue of the artificial heart to the minds of the public by blurbs of the press which hype the issue," he said.

But John Dwan, community relations spokesman for the University of Utah, says Wilson's comments are a contradiction in terms.

"The University has not hyped the program. The tremendous interest on the part of the public is merely reflected by the media," Dwan said. "We

have sent out no news releases from the beginning, and yet we continue to receive five to 10 inquiries a day, and the research program is virtually on hold."

Wilson questions the fact that the first implant ever took place.

"The assessment 10 years ago by the National Heart and Lung Association was made on the assumption that the heart would be totally implantable," Wilson reported.

History was made on Dec. 2, 1982, when Barney Clark received the first "permanent" artificial heart — the heart had no implantable power source, and therefore was fastened by 6-foot lines to a 350-pound console.

The totally internal implantable artificial heart is the ultimate object of the program, Dwan said. "Comparing the first implant with the totally implantable heart is like comparing a Wright Brothers plane with a 747."

Wilson questions the quality of life afforded to recipients of an unimplantable heart.

What happens when a patient develops a terminal disease and the artificial heart keeps beating? And who will turn off the pump and when?

In Barney Clark's case, physicians determined that there were no neurological responses occurring. In Utah, no further evidence is required to determine brain death, and an unidentified person turned off the machine, according to a Newsweek article published in 1983.

"Our position is we ought not to be afraid to go where research takes us," even though the experimental stages, Dwan said. "The research is pursued, and whether or not society is ready for it is a different question."

But Wilson feels this is not so. "The technology is not advanced enough to the point that the heart is implantable, and until it is, we shouldn't even consider taking it out of the cow."

Until society has the time, knowledge or tools to adequately evaluate or access the social, ethical and economical implications of such an expensive technological advancement and its long-term implications, research should be conducted on cows. "I'm not sure that society has reached these decisions," Wilson said.

According to Dwan, the questions that Wilson has raised are valid and need answering, but the researchers and physicians are not the ones to answer them. "We do contribute to the answering of them; society as a whole will have to address the issues for itself," he said.

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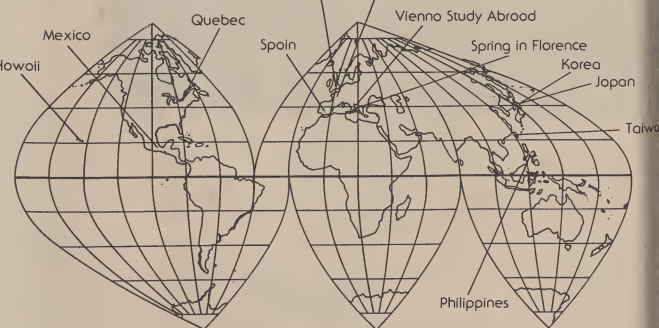
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